Electronic Departure Approval Requests in ATD-2 Daily Operations

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Departure Approval Requests

- Traffic management initiative for applying tactical departure delay
- Traditional method: ‘Call-For-Release’

Compliance Window:
Two minutes earlier to one minute later
Stream Insertion
Outline

• NASA Airspace Technology Demonstration 2 (ATD-2)

• Electronic APREQ negotiation

• Charlotte APREQ flights Jan 2018-Feb 2019
Integrated Arrival-Departure-Surface Air Traffic Management

- Time-Based Scheduling
- Airspace/Surface Resource Management
- Flight Data Exchange and Integration
- System-Wide Information Management

Data Integration and Sharing
Surface Traffic Scheduling
User Participation and Feedback
Electronic APREQ Negotiation

- APREQ flights & eligibility for electronic negotiation
- Release time request methods
  - ‘Select Slot on Timeline’
  - ‘Request Release Time’
- Projected compliance
- Semi-automatic or automatic response mode
Charlotte Operations Jan 2018-Feb 2019

- 303,729 departures over 402 days (21 low-departure days removed)
- Top-10 destinations frequently subject to APREQs
Controlled Release Times

26,733 flights (8.8% of all departures)
Release Requests: Atlanta Center

Number of Atlanta Center APREQ Flights

Request Release Time

Select Slot on Timeline

Call For Release

[Graph showing the number of APREQ flights for Atlanta Center from July 2018 to February 2019, with different categories distinguished by color.]
Release Requests: Atlanta Center

Reflects ‘Pre-scheduling’

Number of Atlanta Center APREQ Flights

Request Release Time

Select Slot on Timeline

Call For Release

2018

2019

Jul  Aug  Sep  Oct  Nov  Dec  Jan  Feb

0  100  200  300  400  500  600  700  800

SEMI, RRT
SEMI, SSOT
SEMI, CFR
AUTO, RRT
AUTO, SSOT
AUTO, CFR
OFF
APREQ Rescheduling

- New release times negotiated for 25.9% of APREQ flights

- Of these, 30.4% received an earlier release time

Delay Savings: 73.8 hours
APREQ Aircraft Locations

Locations at Initial Approval
(Non-prescheduled Flights)

Locations at Final Approval
(Rescheduled Flights)
Assigned Delay

APREQ Delay = Final Approved Release Time - Ltime

Atlanta Center
Mean 22.1 mins (S.D. 8.3 mins)

Washington Center
Mean 23.9 mins (S.D. 8.3 mins)

APREQ Flights with valid Ltimes; outliers removed: 90.8% of APREQ flights
APREQ Compliance
APREQ Negotiation Response Times

Washington Center

Atlanta Center

Approval Response Time (secs)

Request Release Time
Select Slot on Timeline
Request Release Time
Select Slot on Timeline
Conclusions

• 8.8% of Charlotte departures are APREQ flights
• ATD-2 STBO Client supports full range of APREQ management functions
• Most APREQs now negotiated electronically
  • Fast response times
  • Rescheduling flexibility
  • Information sharing
• Compliance is improving
• Results support broader future deployment of similar capabilities